

hundred persons are reported to have perished, and it is feared that the loss of life will prove even greater.

A WATERSPOUT passed over a portion of the town of Hagenau (Alsace) on May 23 last, doing very great damage to houses and trees.

AT Stendal (Prussian Saxony) a Committee for the erection of a monument in memory of Dr. Gustav Nachtigal has been formed, and contributions towards this object are solicited.

THE Austrian Central Tourist Club has addressed a petition to the Assemblies of all Austrian alpine provinces to pass a law prohibiting the wholesale uprooting of *Edelweiss* now carried on. The petitioners point out that hundreds of thousands of the plants are dug up and sent abroad, even to America, so that there is a fear that the favourite plant of all lovers of the Alps will be totally exterminated, except in a few remote places. In Switzerland, it is stated, for several years past there have been stringent laws in the several cantons against uprooting and selling the *Edelweiss*.

THE rôle of wind in fertilising the ground is remarkably illustrated, according to M. Alluard, by the very fertile valley of Limagne, in Auvergne. The prevalent winds there are west and south-west, and traverse the chain of the Dômes, where are vast deposits of volcanic ashes. Much of this dust is thus carried to the Limagne valley, and settles there of itself, or is carried down by rain or snow. As it contains a large amount of phosphoric acid, potash, and lime, it is highly fertilising, and its very fine state favours rapid assimilation. From observations on the Puy de Dôme, M. Alluard estimates the annual deposit at 348 to 400 grammes per square metre.

WE have received the Calendar of the University of Virginia for the academical year 1884-85. The science department appears to be exceptionally strong and well organised.

ONE result of the recent visit of the Ameer of Afghanistan to India is that his palace at Cabul is to be lit by the electric light. He ordered the necessary apparatus when at Rawul Pindi, and three Cabulese have for some time past been studying its manipulation at Bombay.

WE have received a copy of a lecture by Mr. Thomas Fletcher, delivered before the Parkes Museum of Hygiene, on "Smokeless Houses and Manufactories." It deals mainly with the lecturer's personal experiences of the employment of gaseous fuel in his private residence and manufactory at Warrington, the appliances which he has used, a comparison of the cost with that of coal, the work done, &c. In reply to a question, Mr. Fletcher expressed the opinion that radiant heat is the only possible comfortable way of heating a living-room, and that it is therefore better to mix gas with air to prevent smoke, and heat as large a surface as possible to incandescence.

ACCORDING to a report by the Director of Public Instruction in Tunis, there are at the present moment twenty primary schools in the Regency—eight in Tunis, and twelve in other towns—Susa, Monastir, Sfax, Goletta, &c. In this number are included three schools of the Israelite alliance at Susa, Tunis, and Mehdiâ. The number of pupils is 3974, composed of 2291 boys and 1683 girls. The report states that there are in addition a certain number of primary schools in which the instruction is religious. Of these there are 113 in Tunis, and about 500 in the whole Regency. For secondary instruction there are three establishments, all in Tunis. These contain 23 classes with 38 masters, giving instruction to 416 pupils, of whom 78 are French, 27 Italian, 26 Anglo-Maltese, 74 Jews, 193 Arabs, and 18 of various nationalities.

A MEETING of the National Fish Culture Association was held on Thursday last to consider the question of instituting sea tem-

perature observations with a view to gaining independent and fresh knowledge with respect to our marine food-fishes. The subject of marine stations was discussed together with other matters relative to log-books to be issued to suitable investigators.

THE additions to the Zoological Society's Gardens during the past week include a Squirrel Monkey (*Chrysotrix sciurea*) from Demerara, presented by Mr. T. C. Edwards-Moss; a Common Badger (*Meles taxus*) from Derbyshire, presented by His Grace the Duke of Devonshire, K.G., F.Z.S.; a Common Badger (*Meles taxus*) from North Wales, presented by Mr. T. W. Proger; two Common Hedgehogs (*Erinaceus europæus*), a Common Viper (*Vipera berus*) from Norfolk, presented by Mr. T. E. Gunn; a Chattering Lory (*Lorius garrulus*) from Moluccas, presented by Mr. H. D. Astley, F.Z.S.; a Red-crested Cardinal (*Puroaria cucullata*) from South America, presented by Miss Hyrzan; a White-tailed Eagle (*Haliaeetus albicilla*) from Perthshire, presented by Mr. H. Tennent Tennent; a Manx Shearwater (*Puffinus anglorum*), a Puffin (*Fratercula arctica*), British, presented by Mr. W. Graham, F.Z.S.; an Egyptian Monitor (*Varanus niloticus*) from West Africa, presented by Mr. H. Denny; an African Lepidosiren (*Protopterus annectens*) from African Rivers, presented by Mr. Cornelius Alfred Malony, C.M.G.; two Slowworms (*Anguis fragilis*), British, presented by Mr. F. J. Guy; a Sharp-nosed Crocodile (*Crocodilus acutus*) from Jamaica, deposited; a Collared Fruit Bat (*Cynonycteris collaris*), an Axis Deer (*Cervus axis* ♀), a Hybrid Luhdorf's Deer (between *Cervus luhdörffi* and *Cervus canadensis* ♂), a Burrhel Wild Sheep (*Ovis burrhell*), two Triangular-spotted Pigeons (*Columba guinea*), a Variegated Sheldrake (*Tadorna variegata*), a Herring Gull (*Larus argentatus*), twenty Spotted Salamanders (*Salamandra maculosa*), thirty Pleurodele Newts (*Molge walti*), bred in the Gardens.

ASTRONOMICAL PHENOMENA FOR THE WEEK, 1885, JUNE 14-20

(For the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on June 14

Sun rises, 3h. 44m.; souths, 11h. 59m. 59⁹s.; sets, 20h. 16m.; decl. on meridian, 23° 18' N.; Sidereal Time at Sunset, 13h. 49m.

Moon (at First Quarter on June 19, 14h.) rises, 5h. 46m.; souths, 13h. 38m.; sets, 21h. 25m.; decl. on meridian, 17° 37' N.

Planet	Rises h. m.	Souths h. m.	Sets h. m.	Decl. on meridian
Mercury ...	2 58 ...	10 56 ...	18 54 ...	20 45 N.
Venus ...	4 26 ...	12 48 ...	21 10 ...	24 11 N.
Mars ...	2 18 ...	10 7 ...	17 56 ...	19 17 N.
Jupiter ...	9 28 ...	16 37 ...	23 46 ...	12 32 N.
Saturn ...	4 7 ...	12 16 ...	20 25 ...	22 28 N.

Phenomena of Jupiter's Satellites

June	h. m.	June	h. m.
14 ...	20 15 III. tr. ing.	18 ...	23 17 II. occ. disap.
...	22 37 I. ecl. reap.	20 ...	20 33 II. tr. egr.
16 ...	22 24 IV. ecl. disap.		

The Eclipses of Jupiter's Satellites are such as are visible at Greenwich.

June	h.	
17 ...	15 ...	Jupiter in conjunction with and 3° 44' north of the Moon.
18 ...	23 ...	Saturn in conjunction with the Sun.

GEOGRAPHICAL NOTES

AFTER having lost, in December last, their director, Prof. W. G. Erofeeff, and in January one of their most active members, W. A. Domzer, the Russian Geological Commission has again sustained a heavy loss in the death of the distinguished G. P. Helmersen. According to the notice in the last issue of the *Izvestia* of the Commission he began his scientific career more than sixty years ago, at the Dorpat University, and when

less than twenty-two years of age. Throughout his life he has had the opportunity of exploring nearly all the surface of Russia in Europe, from Olonetz to the Crimea and from Poland to the Ural, penetrating also into the Kirghiz Steppes in the Asiatic dominions of the empire. The results of his varied explorations are embodied in 130 monographs, some of which are bulky works. His first work of importance, the "Exploration of Southern Ural," was published in 1831, in connection with Hofmann. Five years later it was followed by a description of the Kirghiz Steppes and by a short paper on the Ural and Altay Mountains. In 1838 he began to publish the results of his explorations of the Baltic provinces, which were thenceforth continued throughout his life. In 1840 he studied the lake region of North-west Russia and of the Valdai Hills, and next year made the first attempt to embody all that was known regarding the geological structure of Russia by publishing the first geological map of the country. The coal-fields of the Moscow basin then attracted his attention, and in 1845 he published the results of his researches into the structure of the Ust-Urt and its slopes towards the Sea of Aral. In 1850 he published an interesting sketch of the Devonian Rocks of Middle Russia. In 1857 there appeared his notice as to the rising of the Baltic shore and the action of ice and water on it, being the first of a series which led him afterwards to investigate the subject of boulders. After having spent four years in the exploration of the Olonetz region, he embodied the results of his observations in a work published in 1860. His researches into the physical conditions of St. Petersburg, the artesian well bored in that capital, and the Alexander monolith, made his name popular even among unscientific readers. A work on Lake Peipus and the Narova river appeared in 1864, and completed his researches in the lake region of North-west Russia. Next year a second revised edition of his geological map of Russia, including the Ural and Caucasus, and a map of the Russian coal-basins, were published by the indefatigable geologist. The supposed drying up of the Sea of Azov was the subject of several papers and reports presented by him to the Academy of Sciences, as also the extension of the coal-fields from the Don, through Tula and Kaluya, to Courland and Eastern Prussia. In 1870 he published his "Studies on Boulders," the second part of which appeared only three years ago. In 1879 he issued a geological and physico-geographical description of the Aralo-Caspian region. A paper, written together with M. Yakovlev on the same subject, in 1883, was his last contribution to the Memoirs of the Academy of Sciences. In all these works, Helmersen appeared as a follower of the school of geologists represented by Leopold von Buch and Alexander Humboldt. Instead of merely describing the fossils of a given formation, and minutely studying its various stratigraphical and palæontological horizons, he tried to discover the leading physical and geographical features of the country he explored, and devoted great attention to dynamical geology. His works are as valuable to the geographer as to the geologist. For twenty-five consecutive years Helmersen was Professor at the Mining Institute of St. Petersburg, and since 1844 he was one of the most active members of the Academy of Sciences. In 1851 he was elected a foreign member of the Geological Society of London—an honour well bestowed on one of the most industrious and distinguished geologists whom Russia has produced.

THE last issue of the *Izvestia* of the Russian Geographical Society contains a map showing M. Potanin's last journey in China, from Peking to Kookoo-koto and Lang-tcheou (73° 30' E. long.), to illustrate M. Potanin's letters dated Boro-balgasun and Lang-tcheou, September and November 13th, 1884. The Ordos, described with so dark features by Huc, looked more attractive than might have been expected. True, the whole of the country between the Yellow river and Boro-Balgasun is covered with sand; but moving sand is rare, the *barkhans* being usually fortified by vegetation. The *shiabyk*—a species of *Artemisia*—is the most frequent growth in the *barkhans*, the cavities between them being thickly covered with bushes of Caragana, *archa*, and *jas-hil*. Water is found wherever the sub-soil appears from beneath the sand; numerous sweet water ponds make their appearance, and they are surrounded with moist pasture-grounds. The dry grounds between the sands are covered with Steppe vegetation, the *Calimeris* colouring sometimes wide spaces in white. Sarrazin, millet, and hemp are cultivated on these dry grounds. Altogether, the eastern Ordos may be considered as a rich country for cattle breeding, if

supported by some agriculture. Two old towns, now in ruins were passed on the borders of the Ordos. Boro-balgasun, too, was formerly a town, within the ruined walls of which there are now but a few Mongolian huts, and the house of the Belgian missionaries. In the Van principality M. Potanin visited the Edjen-khoros place, on the Tchamkhak river; it consists of two tents where the bones of Chengiz-khan are said to be preserved. On Sept. 22, the expedition left Boro-balgasun. They visited the salt lake Baga-shikyur, and for five days crossed a region covered with low hills and almost uninhabited, notwithstanding the good pasturage which spread between the *barkhans*, these last becoming more thinly spread than in the east. Ruins of Mussulman villages destroyed during the last insurrection are not uncommon. Lin-tcheou, on the Hoang-ho, is surrounded by fruit-gardens. South of it numerous villages extend for some fifty miles along a canal which runs parallel to the Hoang-ho and crosses on aqueducts its tributaries. Its banks offer an uninterrupted fruit garden, with a few rice-fields. All this richness is, however, of recent origin, the former gardens having been all destroyed by Chinese after the last insurrection. Altogether, the region bears traces of desolation; whole towns have been quite destroyed. The town Tsin-tsi-pou was the centre of the insurrection. South of this town, M. Potanin left the valley of the Hoang-ho, and crossed the series of flat ridges which reach towards the south, 6,000 feet to 7,000 feet above the sea-level. Still they have gentle slopes, owing to their covering of Loess which reaches a thickness of from 200 to 300 feet. The hills are formed of red sandstone, with some layers of pudding-stone north of the Tao-tsoui river, while south of Tsin-youang the ridge consists of silicious and clay-slate. The sandstone contains beds of salt, which impregnates also the soil and is worked to some extent; it is raised also from a number of small lakes. The Loess covers the whole of the country from Ping-yang-sia to Lang-tcheou, spreading also over the summits of the higher ridges. The population is of Turk origin, and though it has assumed Chinese customs it maintains its Mussulman religion. In the hilly tracts dwellings, and even inns, are dug out in the Loess. Lang-tcheou is a great city, picturesquely built on the right bank of the Hoang-ho at the foot of a high mountain ridge. A floating bridge crosses the great river. The plants collected for the herbarium by the expedition were but few, owing to the late season; but altogether in the whole region there are no trees excepting those which are cultivated; even the higher ridges are devoid of trees and but scarcely clothed with grass. From Lang-tcheou, where the astronomer, M. Skassy, remained with the scientific collection, M. Potanin went to the west to visit the Salors and Shorongols, who inhabit that region, while M. Berezovsky proposed to advance further south to Hoy-sian, situated on the water-divide between the Yellow and the Blue Rivers. The scientific results of the expedition promise to be very interesting. The astronomer, M. Skassy, has determined the position of fifteen places and mapped the route. M. Berezovsky has collected 140 samples of birds, and M. Potanin brings back collections of plants, insects, and reptiles, as also a geological collection.

A RECENT number of the *Japan Gazette* contains a series of notes on each of the islands forming the Kurile group, which stretches from Jesso northward to Kamtschatka, and which for the past ten years have belonged to Japan. The notes are arranged by Prof. Milne, from his own notes and those of Mr. Snow, who has spent many consecutive summers amongst the islands. They refer mainly to the numerous volcanoes among the Kuriles, but much information on other points relating to this little-known group is given. The name applied by the Japanese to the chain is "Chishima," or "the thousand islands," but there are really not more than thirty or forty. Of these, Iturup and Kunashiri, the most southern members of the group, are the largest. They "form the first links of the chain which volcanic agencies have built up whilst attempting to join Japan and Asia." Iturup is 113 miles long and 77 in greatest width; Kunashiri is 62 miles by 17. They are all very desolate, and sparsely populated in summer by Japanese and Ainos, who come to fish. In Iturup, between the coast and the mountains, there is a kind of jungle composed mainly of bamboo grass, which is impassable. The explorer has therefore to follow the bed of a stream or the bear tracks. Prof. Milne thinks it not unlikely that the Iturup bear may be a species new to science. From the specimens seen in cages it seems to resemble the grizzly bear of North America.